

PROJECT facts

U.S. DEPARTMENT OF ENERGY
NATIONAL ENERGY TECHNOLOGY LABORATORY

Natural Gas Processing

EMERGING TECHNOLOGIES FOR THE NATURAL GAS INDUSTRY

Natural Gas Upgrading

The focus in this technology area is on the development of economically viable, advanced natural gas upgrading technologies to fully utilize domestic supplies of natural gas.

CONTACT POINTS

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WEBSITE

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Objectives

Research in low-quality gas upgrading focuses on finding lower-cost ways to remove sulfur, carbon dioxide, nitrogen, and other impurities from low-quality gas. The gas purification technologies enable the upgraded gas to meet specifications for pipeline shipment to the marketplace. Specific technology focus is on:

- Development of novel membranes for carbon dioxide and nitrogen removal
- Field testing of novel solvents for acid gas removal
- Membrane module testing at field site for removal of water and natural gas liquids
- Microbial enhanced redox solution re-oxidation for sweetening sour natural gas



Current Activities

- Field demonstrations for the removal of natural gas liquids and acid gas
- Liquid absorbent process for the removal of Nitrogen
- Development of composite polyimide hollow fiber membranes for CO₂ removal
- Non-aqueous liquid redox process for H₂S removal
- Microbial method for H₂S removal



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PARTNERS

**Membrane Technology
and Research Inc.**

Menlo Park, California

Institute of Gas Technology

Des Plaines, Illinois

Radian International

Austin, Texas

Sandia National Laboratory

Livermore, California

Texas A&M University

Kingsville, Texas

**Innovative Membrane
Systems/Praxair**

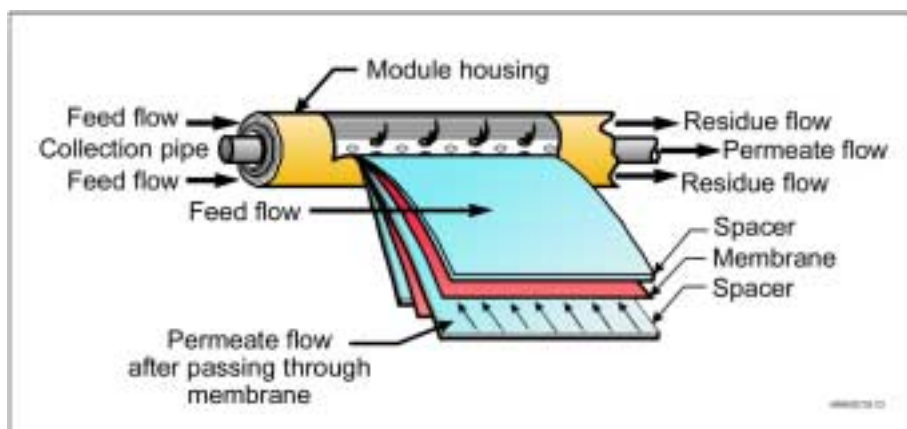
Norwood, Massachusetts

Bend Research Inc.

Bend, Oregon



*Skid-Mounted Field Units for
Natural Gas Upgrading*



MTR's Spiral Wound Module